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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/544,789	09/14/2005	Wolfgang Dinser	8009-84380	8223

42798 7590 06/13/2006

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EXAMINER	
PIGGUSH, AARON C	

ART UNIT	PAPER NUMBER
2838	

DATE MAILED: 06/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

H1-6

Office Action Summary	Application No.	Applicant(s)	
	10/544,789	DINSER ET AL.	
	Examiner	Art Unit	
	Aaron Piggush	2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 August 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 August 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *8 August 2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bluemel (US 6,384,489) in view of Amano (US 2002/0158513).

With respect to claim 1, Bluemel discloses a power supply circuit for a motor vehicle electric system having: a starter and a generator (S and G in Fig. 1), a power electronics system (W1, W2, W3, HV, and LV in Fig. 1), at least one battery (B1 in Fig. 1), at least one dynamic energy accumulator (B2 in Fig. 1) and a DC/DC converter (W1 and W2 in Fig. 1), wherein the starter and generator can be connected to the vehicle electric system via a first connection branch in which the DC/DC converter is arranged (Z1 in Fig. 1), characterized in that the starter and generator can be connected to the vehicle electric system via a second connection branch (Z2 in Fig. 1), wherein both the first and the second connection branches each have, at their side connected to the starter and generator, a switch (contained in each DC-DC converter W1 and W2 in Fig. 1, also there is an additional switch LS in Fig. 2 and Fig.1, although it is not labeled in Fig. 1) by means of which the connection branch can be disconnected, the battery is connected on the vehicle electric system side between the second connection branch and ground (as seen at the connection of battery B1 to Z2 in Fig. 1), the energy accumulator is connected between the switch in the first connection branch and the DC/DC converter between ground and the first

connection branch (as seen at the connection of accumulator B2 to Z1 in Fig. 1), and a control device (W3 in Fig. 1 and col 2 ln 37-59) is formed which actuates switches in the first and the second connection branches and the DC/DC converter in response to a charge state of the battery and of the energy accumulator and an operating state of the motor vehicle (col 5 ln 33-56) in such a way that recuperation energy which is present in the energy accumulator is stored and recuperation energy which is present is optionally used to charge the battery if the energy accumulator is fully charged (col 6 ln 34-58 and col 5 ln 10-55), drive support is provided by energy from the energy accumulator as soon as the energy accumulator is charged after an initial start (col 5 ln 15-18), and drive support is provided from the battery up to this time (col 6 ln 30-58 and col 7 ln 4-13), for a rapid start energy is used from the energy accumulator (col 5 ln 10-18 and col 6 ln 44-48), the battery is charged according to its charged state as required (col 6 ln 51-58 and col 7 ln 13-23), and after a recuperation the vehicle electric system is fed via the battery (col 6 ln 5-33 and col 7 ln 13-28).

Furthermore, it is well known that a conventional DC-DC converter, as used by the Bluemel reference, contains a switch in order to control the use (and duty cycle) of the converter (col 3 ln 28-31 and col 5 ln 24-41).

However, Bluemel does not expressly disclose wherein the generator is a starter generator.

Amano discloses a starter generator in power supply equipment for a motor vehicle (no. 2 in Fig. 1 and para 0002 and 0012), in order to provide a power system with less parts and requiring less space, while also improving fuel efficiency.

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include a starter generator in the system of Bluemel, as did Amano, so that the system could be made of less parts, would be easier to manufacture, and would have improved fuel efficiency.

With respect to claim 2, Bluemel discloses the power supply circuit characterized in that a monitoring device is also formed (W3 in Fig. 1 and col 5 ln 33-56) which monitors the charge state of the battery and of the energy accumulator and transfers the monitoring result to the control device (W3 in Fig. 1, contains both monitoring and controlling circuitry).

With respect to claim 3, Bluemel discloses the power supply circuit characterized in that the switches are embodied as controllable switches and further discloses wherein there is another switch which is a controllable semiconductor switch (col 3 ln 28-37 and col 6 ln 20-24), however, does not expressly disclose wherein the switches used in the DC-DC converters on the first and second connection branches are semiconductor switches.

It is well known to one of ordinary skill in the art that conventional DC-DC converters can use semiconductor switches as the controllable switches, in order to control the duty cycle and reach a proper output while keeping a low cost and low failure rate.

Amano uses controllable semiconductor switches (as seen in no. 3, 11, and 12 in Fig. 1) in the power control system, in order to supply the desired amount of power for the system's use while also having the ability to separate the battery from the start-up of the engine (abs ln 6-9).

At the time of the invention, it would have been obvious to a person of ordinary skill in the art to include semiconductor switches in the connection branches of the system of Bluemel, as did Amano, so that a desired output could be reached and so that the battery could be quickly

separated or connected to various components of the system as needed, while still keeping the costs and difficulty of production of the system at a minimum value.

With respect to claim 4, Bluemel discloses the power supply circuit characterized in that the dynamic energy accumulator is embodied as a capacitor (col 5 ln 10-14).

With respect to claim 5, Bluemel discloses the power supply circuit characterized in that the capacitor is embodied as a supercap or ultracap (col 5 ln 10-14).

With respect to claim 6, see the rejection of claim 3 above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron Piggush whose telephone number is 571-272-5978. The examiner can normally be reached on Monday-Friday 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Karl Easthom can be reached on 571-272-1989. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AP

KARL EASTHOM
SUPERVISORY PATENT EXAMINER